THE NOKIA BLOG

# SERVICE MANUAL
# Level 1&2

NOKIA N82

**RM-313** **RM-314**

## Transceiver characteristics:

### Band:

**GSM:** Quad-band 850/900/1800/1900MHz

**RM-313: WCDMA:** 2100MHz

### Display:

**LCD:** 6.096cm QVGA (2.4") (240x320 pixel); 16.7M colors

### Camera:

**Camera:** 5.0 Megapixel SMIA95, 6x digital zoom, Xenon Flash

### Operating System:

Series 60

### Connections:

**Wireless:** Bluetooth, WLAN

**Connector:** Micro USB Connector; AV Connector 3.5mm

### Memory:

MicroSD™ (max 2GB)

**Transceiver with BP-6MT Li-Ion battery pack**

| Talk time | Standby | Note |
|---|---|---|
| up to 4.3h | up to 9.4days | Depends on network parameters and phone settings |



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# 1. CHANGE HISTORY

| Status | Version No. | Date | Comments |
|---|---|---|---|
| Draft | 0.1 | 06.Nov.2007 | Initial draft |
| Approved | 1.0 | 14.Nov.2007 | Approval |
| | | | |
| | | | |

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used only by authorized NOKIA service suppliers, and the content of it is confidential. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist.
If you find any errors or if you have further suggestions, please notify NOKIA using the address below:

**CMO Operation & Logistics**
**Training and Vendor Development**
**Multimedia Creation & Support**
mailto:Service.Manual@nokia.com

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

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The availability of particular products may vary by region.
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# 3. WARNINGS AND CAUTIONS

## Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

## Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI–SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

## Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti–static workstation and that an anti–static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re–fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly.

# 4. ESD PROTECTION

Nokia requires that service points have sufficient ESD protection (against static electricity) when servicing the phone.
Any product of which the covers are removed must be handled with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.
To replace the covers ESD protection must be applied.
All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.
All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).
Every repair action involving opening the product or handling the product components must be done under ESD protection.
ESD protected spare part packages MUST NOT be opened/closed out of an ESD Protected Area.
For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.


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# 5. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil any warranty obligations and to enjoy this product for many years.

- Keep the phone and all its parts and accessories out of the reach of small children.
- Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.
- Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When it warms up (to its normal temperature), moisture can form inside, which may damage electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.
- Do not paint the phone. Paint can clog the moving parts and prevent proper operation.
- Use only the supplied or an approved replacement antenna. Unauthorised antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.

# 6. BATTERY INFORMATION

Note: A new battery's full performance is achieved only after two or three complete charge and discharge cycles! The battery can be charged and discharged hundreds of times but it will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery. Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer.

Unplug the charger when not in use. Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime.

If left unused a fully charged battery will discharge itself over time Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMh batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product).

Do not attempt to discharge the battery by any other means Use the battery only for its intended purpose. Never use any charger or battery which is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.


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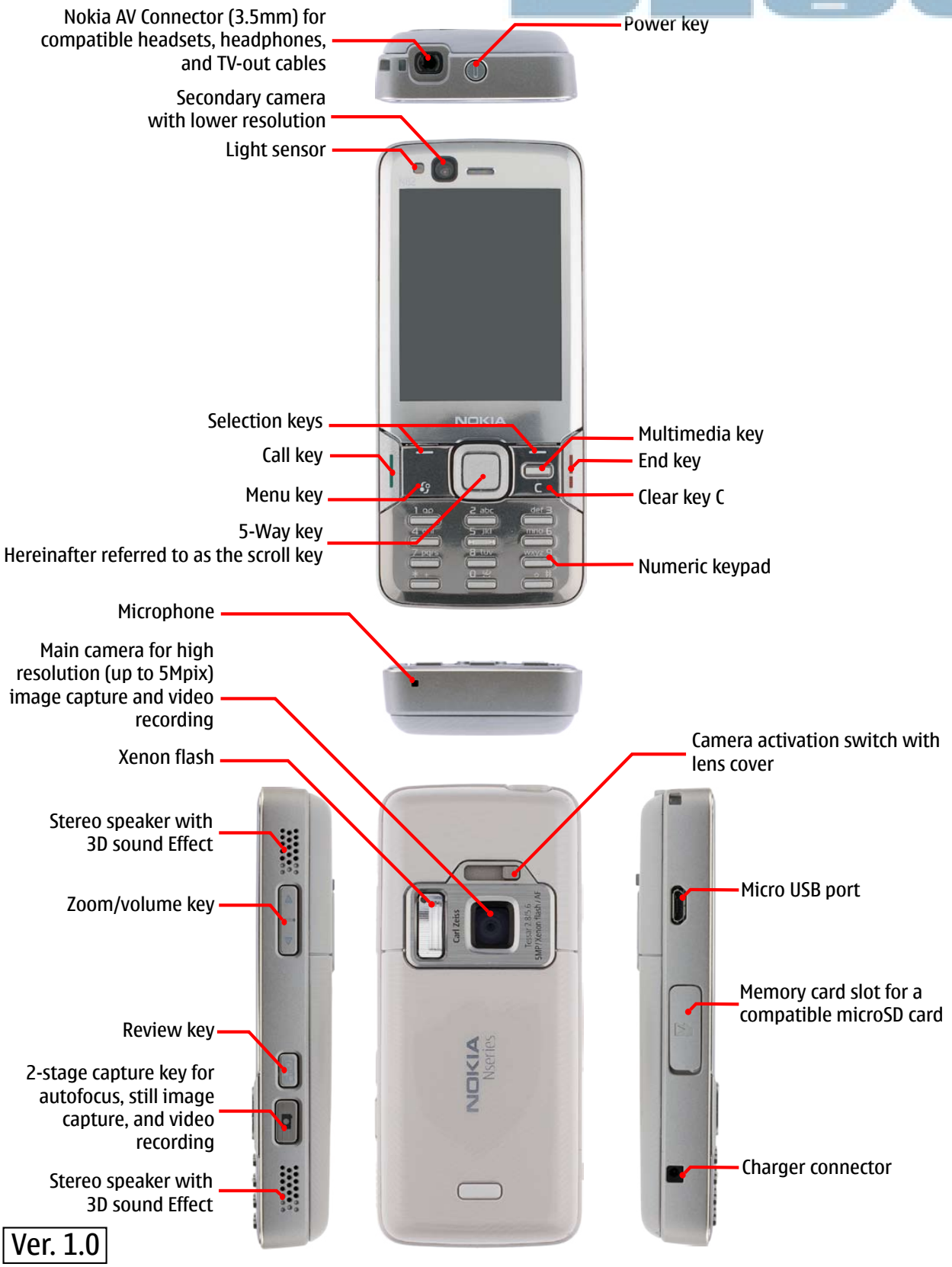
# 7. PRODUCT CONTORLS & OVERVIEW

## N82 RM-313/ RM-314 Product Controls & Interfaces


Nokia AV Connector (3.5mm) for compatible headsets, headphones, and TV-out cables
Power key
Secondary camera with lower resolution
Light sensor
Selection keys
Call key
Menu key
5-Way key
Hereinafter referred to as the scroll key
Multimedia key
End key
Clear key C
Numeric keypad
Microphone
Main camera for high resolution (up to 5Mpix) image capture and video recording
Xenon flash
Camera activation switch with lens cover
Stereo speaker with 3D sound Effect
Zoom/volume key
Review key
2-stage capture key for autofocus, still image capture, and video recording
Stereo speaker with 3D sound Effect
Micro USB port
Memory card slot for a compatible microSD card
Charger connector

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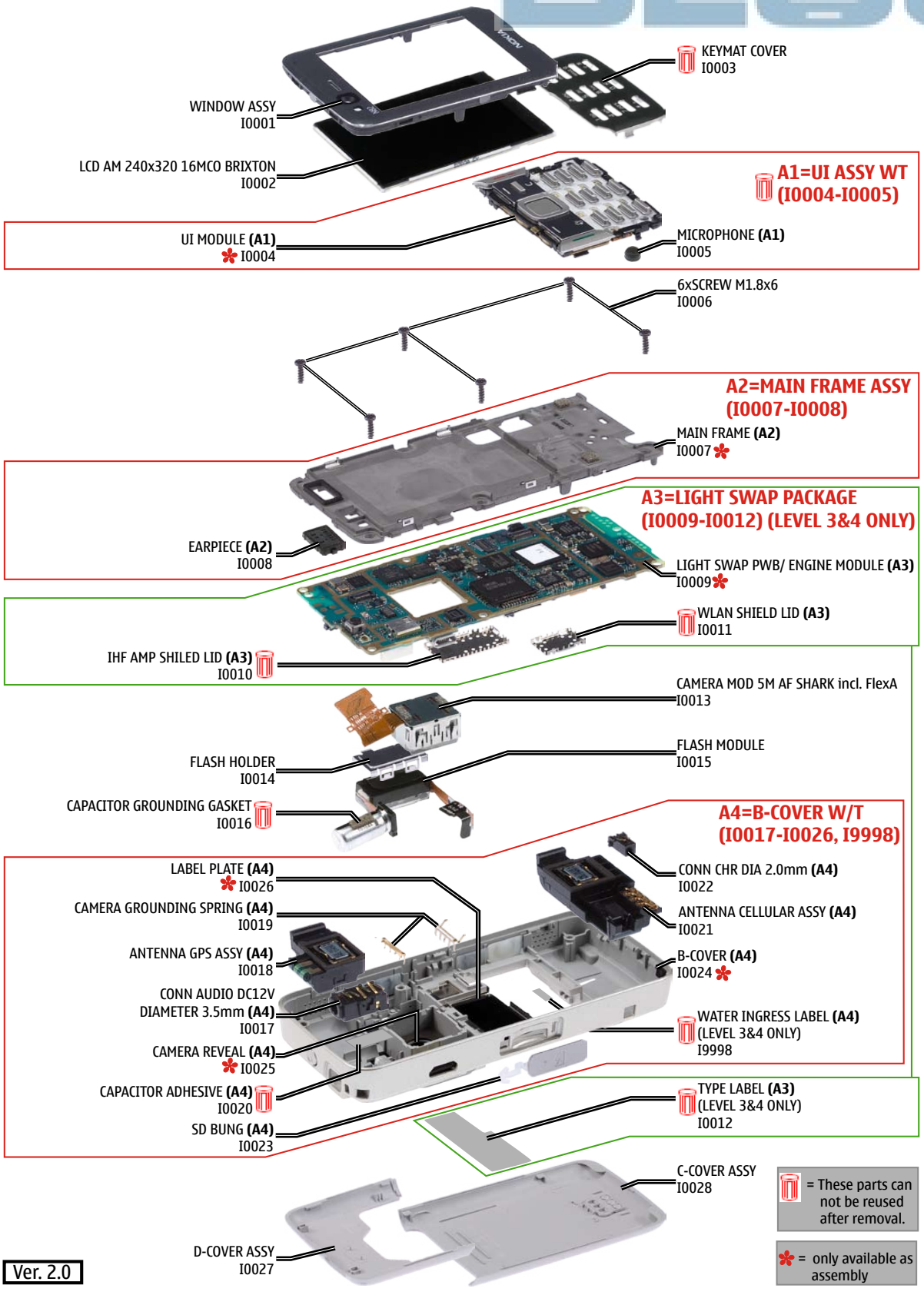
# 8. EXPLODED VIEW

See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.

## N82 RM-313/ RM-314 EXPLODED VIEW

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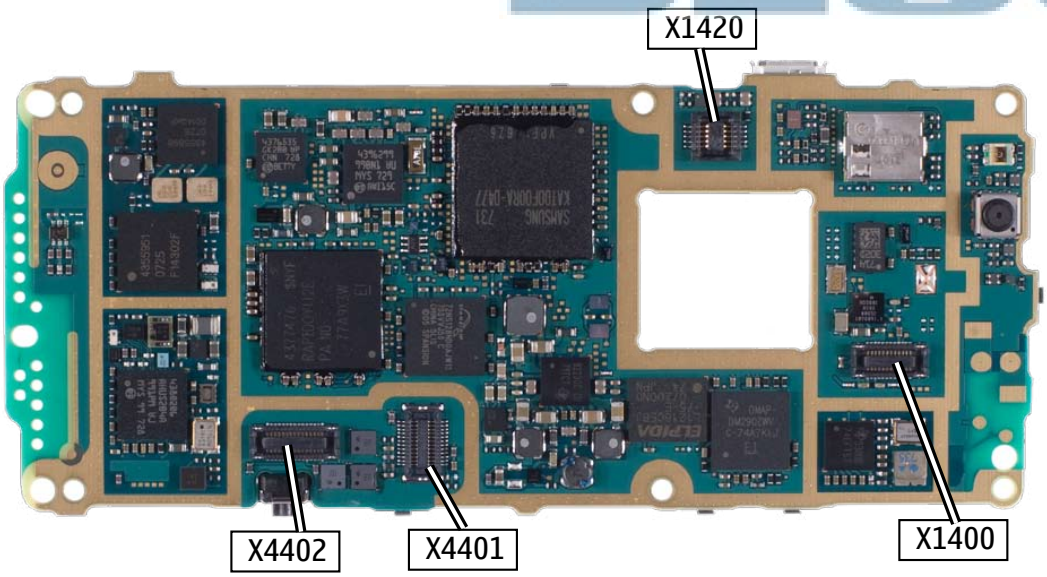
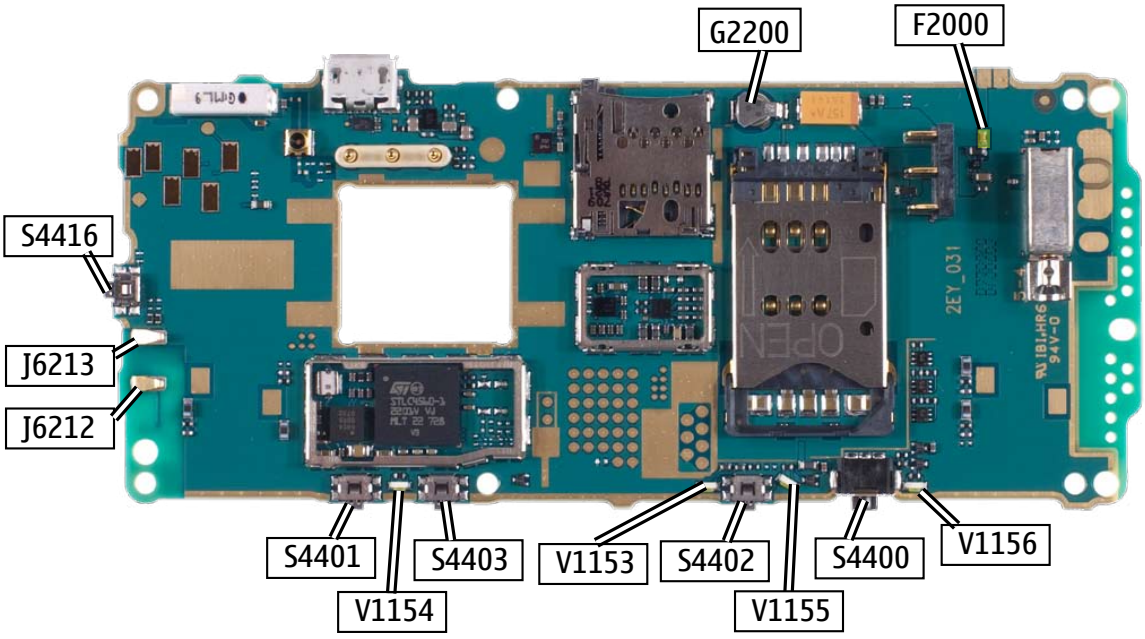
# 9. LEVEL 2 SOLDER COMPONENTS

## N82 RM-313/ RM-314 Components overview

**Solder components only for LEVEL 2**

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## 10. SERVICE DEVICES

| | | |
|---|---|---|
| **FLS-5 incl. ACF-8, Driver and User Guide**<br>Dongle and flash device incorporated into one package, developed specifically for POS use. | **ACF-8**<br>Universal Power Supply is used to power FLS-5. | **Travel Charger AC-4**<br>Small and lightweight charger for fast charging of your phone battery. |
| **CA-101**<br>Service Cable to connect the PC with the Micro USB connector. | | **RJ-189**<br>Soldering Jig |
| **Internal Battery BP-6MT**<br>Inserted under the back cover, this Li-Ion battery provides power in a lightweight package. | | **0772040**<br>**NMP Standard Toolkit (V2)**<br>For more informations refer to the Service Bulletin (SB-011) on NOKIA Online.<br>Supplier or manufacturer contacts for tool re-order can be found in "**Recommended service equipment**" document on NOKIA Online. |


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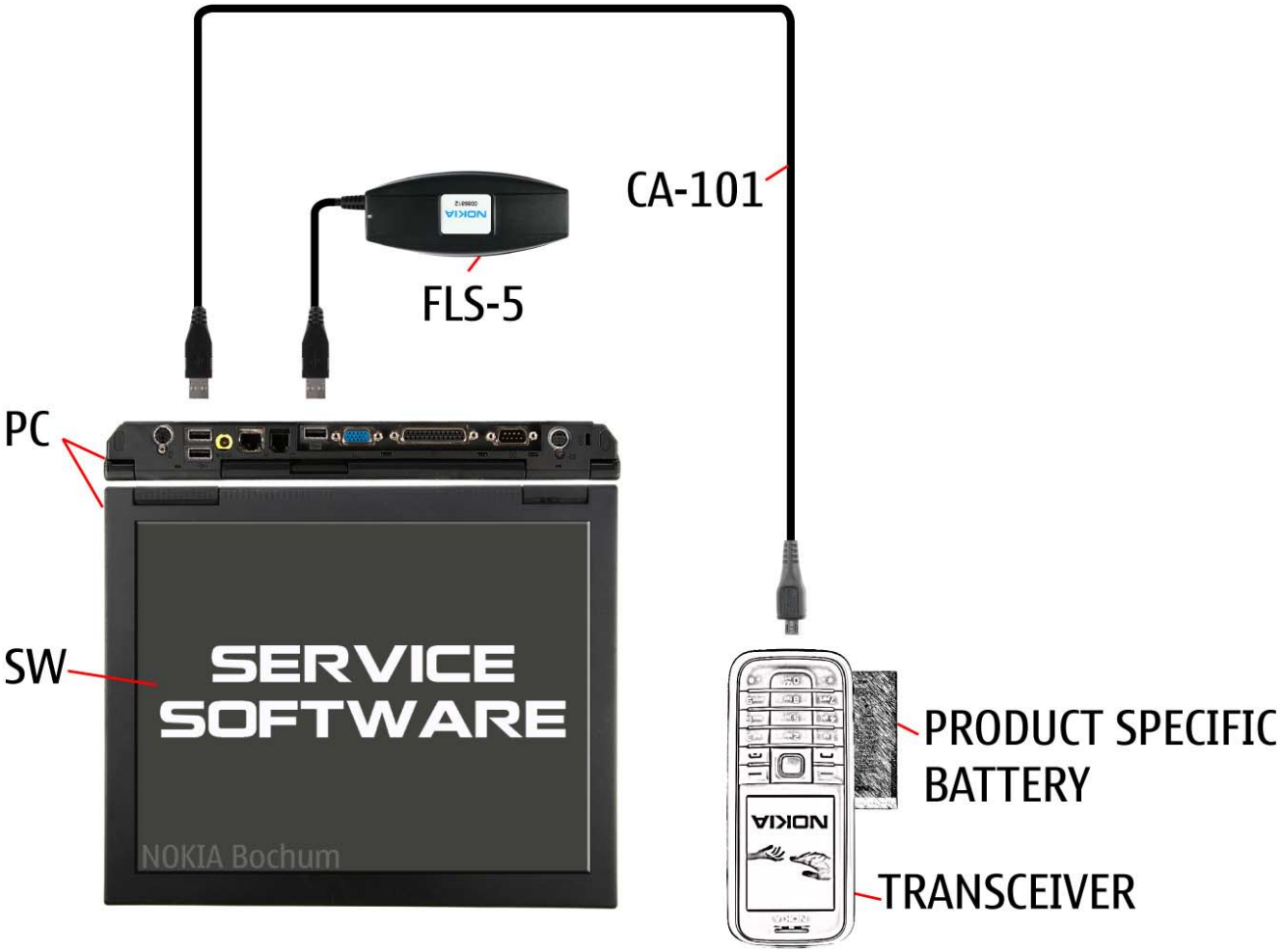
# 11. SW-UPDATE

## Flash Concept – (Point of Sales)

To use FLS-5 Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on
NOKIA Online.





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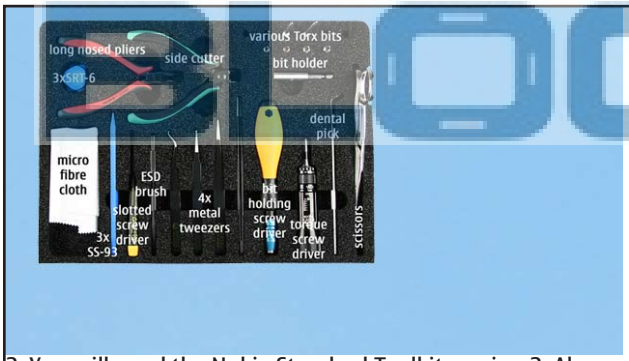
# 12. DISASSEMBLY

1. Nokia N82 Disassembly.




2. You will need the Nokia Standard Toolkit version 2. Also refer to the General Mechanical Guideline Video.

3. Unlock and remove the C-COVER ASSY. Remove the battery if inserted.

4. Use the SS-93 to open the snaps of the WINDOW ASSY.

5. Move the opening tool to the shown place and open the next snap.

6. Now, open the snaps on the top of the WINDOW ASSY.

7. Continue on the other side.

8. The WINDOW is hooked into the MAIN FRAME ASSY. To open the hooks gently press down the WINDOW in the middle and remove it .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9. Unlock all clips of the KEYMAT COVER.

10. Remove the KEYMAT COVER and discard it.

11. Unlock the bottom snaps of the UI Module.

12. Unlock both side snaps. Avoid damaging of the B-COVER.

13. Use the SS-93 as a lever and lift the UI MODULE from the MAIN FRAME ASSY.

14. Turn the UI MODULE to the shown side..

15. ...and very carefully open the UI MODULE connector.

16. Remove the MICROPHONE and discard the UI MODULE.


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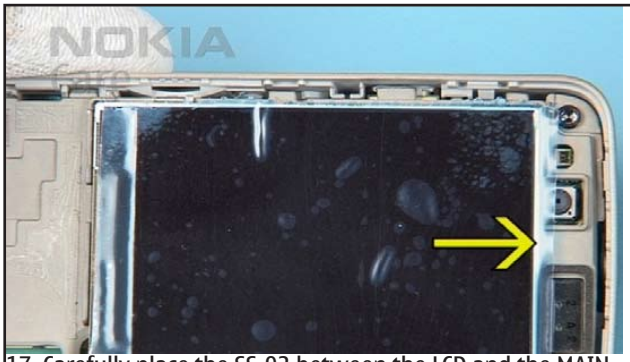
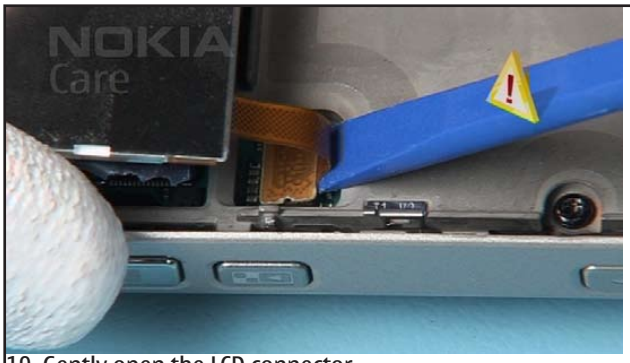


17. Carefully place the SS-93 between the LCD and the MAIN FRAME ASSY in the marked place.

18. Very carefully lift the LCD from the MAIN FRAME.



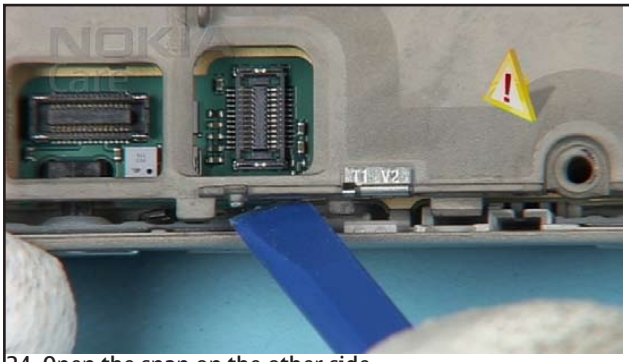
19. Gently open the LCD connector.

20. Undo the Torx PLUS size 6 screws in the order shown...

21. ... and remove them.

22. Unlock the MAIN FRAME ASSY starting at the shown side.

23. Open the next snap.



24. Open the snap on the other side.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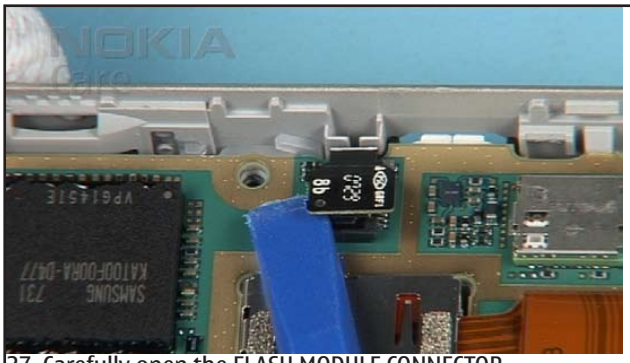
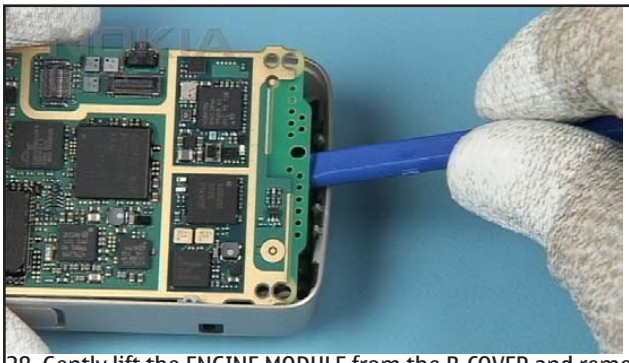
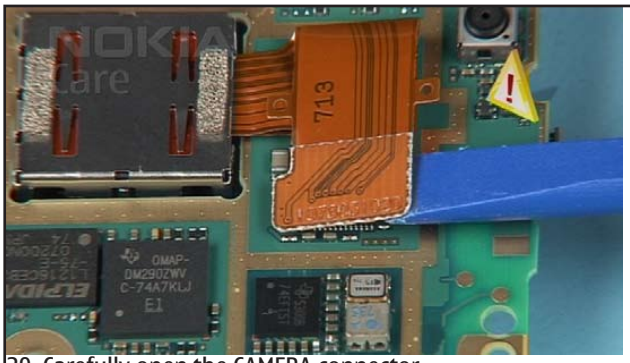
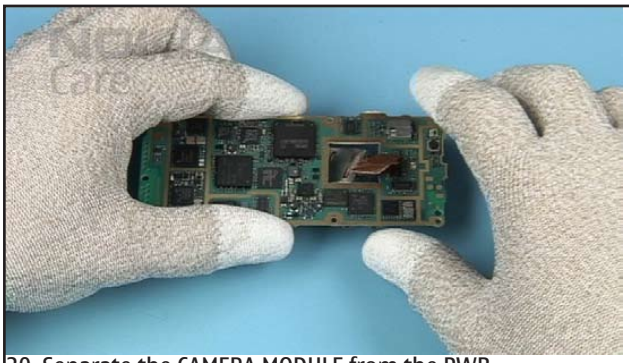
25. Remove the MAIN FRAME ASSY from the B-COVER.

26. Remove the EARPIECE.

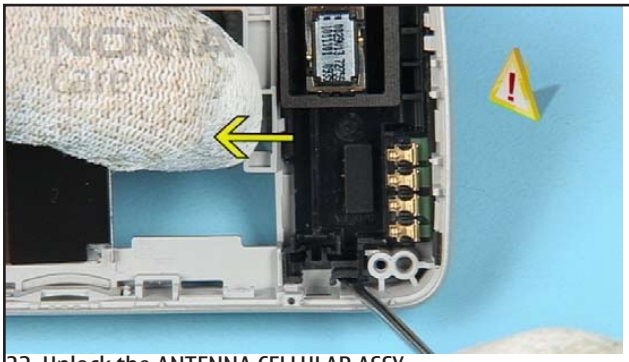

27. Carefully open the FLASH MODULE CONNECTOR.


28. Gently lift the ENGINE MODULE from the B-COVER and remove it.


29. Carefully open the CAMERA connector.


30. Separate the CAMERA MODULE from the PWB.

31. Remove the DC-JACK with the DC-Plug.


32. Unlock the ANTENNA CELLULAR ASSY.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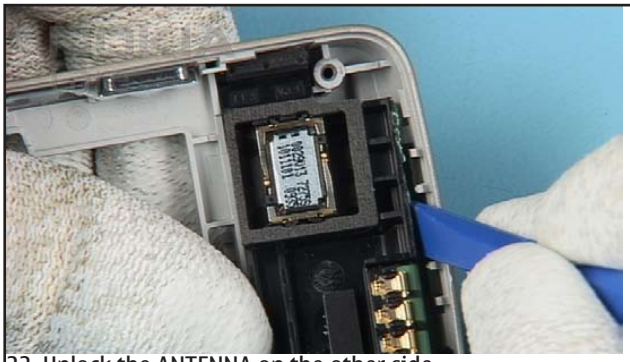
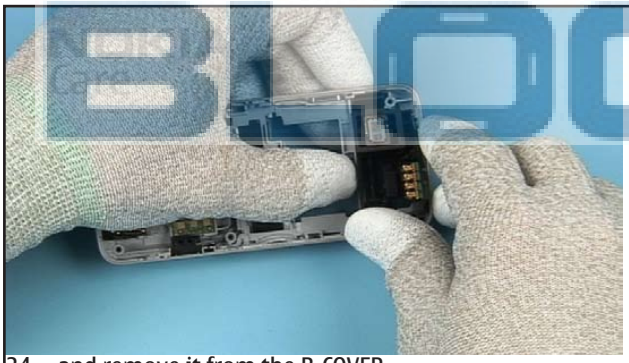

33. Unlock the ANTENNA on the other side...


34. ...and remove it from the B-COVER.

35. Use a 3.5mm headset plug to unlock the AUDIO CONNECTOR.

36. AUDIO CONNECTOR drops out by turning the B-COVER.

37. Carefully remove the CAMERA GROUNDING SPRINGS.

38. Unlock the FLASH HOLDER...

39. ...and remove it.

40. Unlock and remove the ANTENNA GPS ASSY.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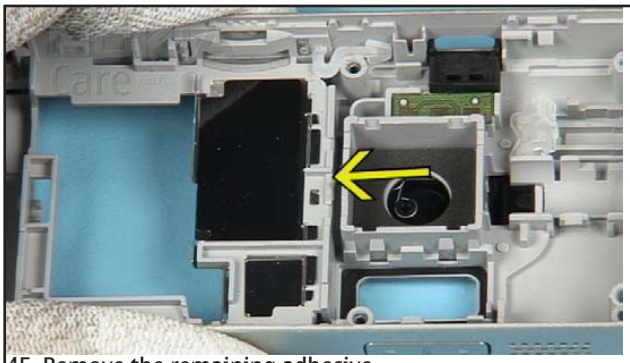
41. Carefully remove the CAPACITOR with the SS-93.

42. Remove the FLASH from B-COVER.

43. Carefully remove the FLASH MODULE...

44. ...paying attention to the flex foil.


45. Remove the remaining adhesive.

46. Gently unlock the D-COVER ASSY with the SS-93.

47. Continue at the other side.

48. Move the D-COVER a bit to the left and remove it.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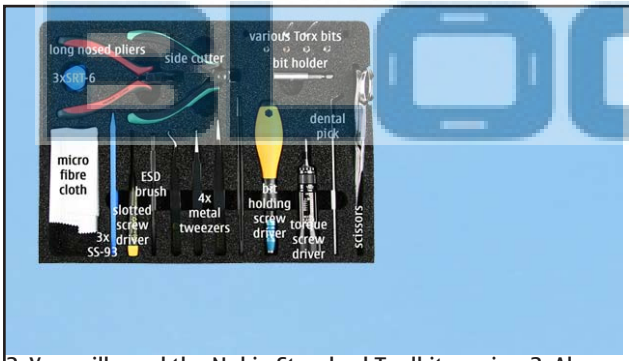
## 13. ASSEMBLY HINTS

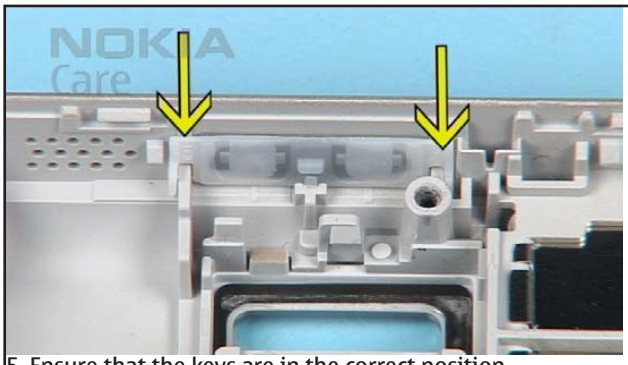
1. Nokia N82 assembly hints.



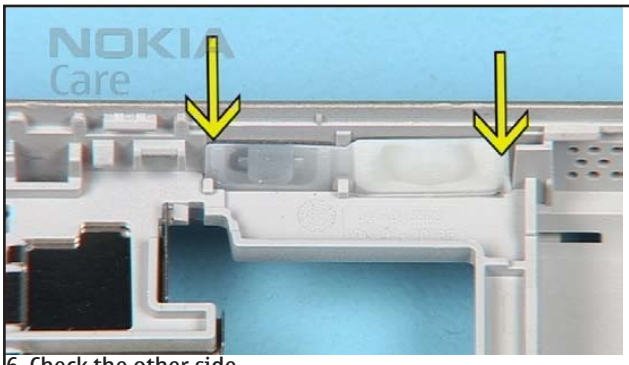

2. You will need the Nokia Standard Toolkit version 2. Also refer to the General Mechanical Guideline video.

3. Place the D-COVER ASSY onto the B-COVER as shown...

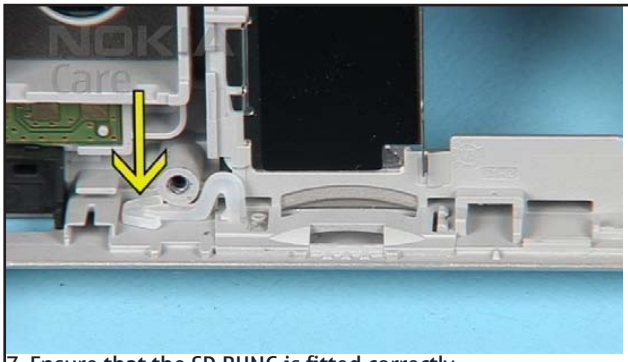
4. ...and secure it by pressing the parts together.



5. Ensure that the keys are in the correct position.



6. Check the other side.



7. Ensure that the SD BUNG is fitted correctly.

8. Fit the ANTENNA into the B-COVER and secure it by pressing it into place. Avoid bending the spring contacts.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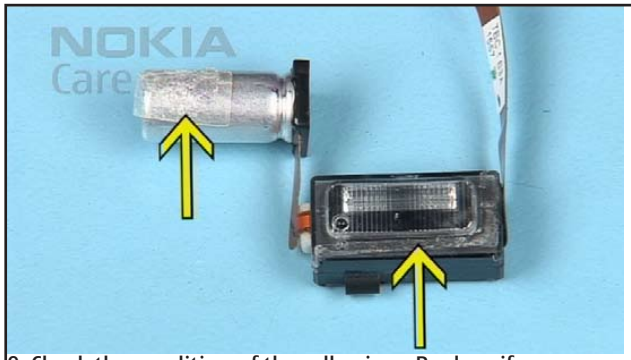
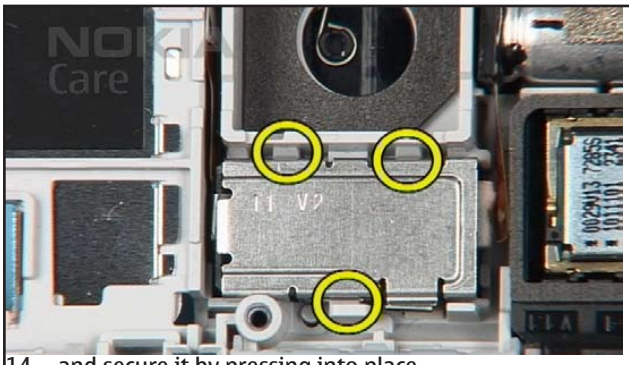

9. Check the condition of the adhesives. Replace if necessary.

10. Also check that no adhesive remains in the B-COVER.

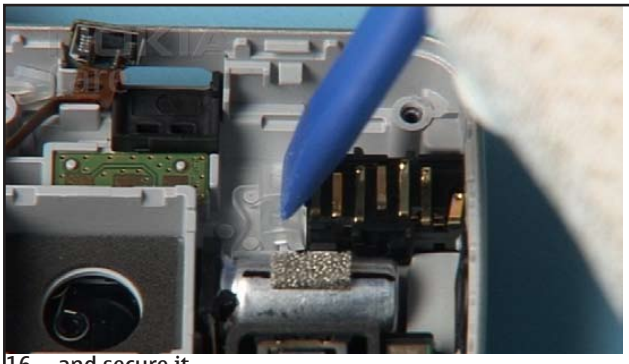
11. Fit the FLASH MODULE by carefully pressing it into B-COVER. Ensure that the flex foil is not bend or squeezed.

12. Check the correct position of the flex connector.

13. Place the FLASH HOLDER onto the FLASH...


14. ...and secure it by pressing into place.

15. Place the AUDIO CONNECTOR into the B-COVER...


16. ...and secure it.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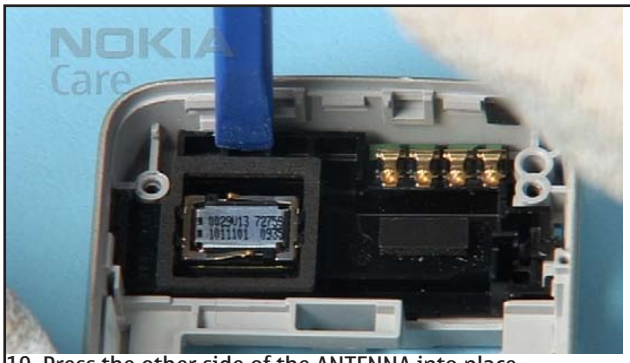
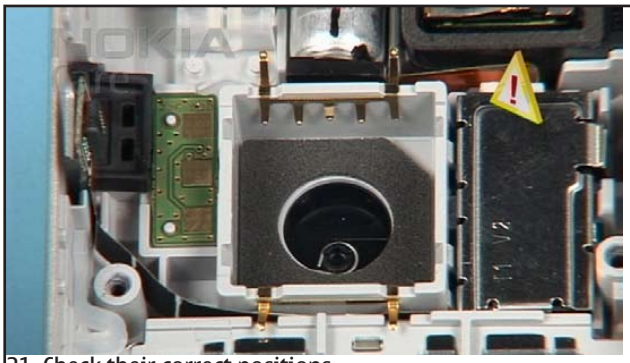
17. Place the ANTENNA CELLULAR ASSY into the B-COVER.

18. Press on the ANTENNA to secure it into place. Do not touch the spring contacts.



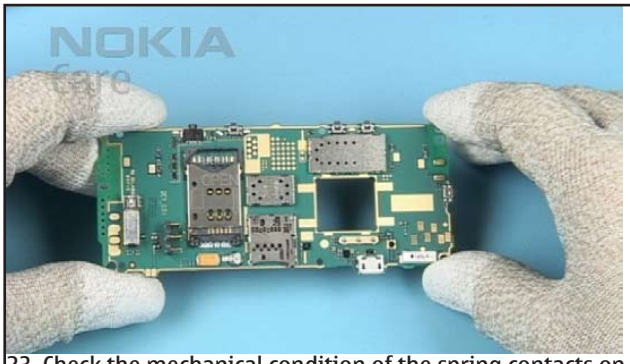
19. Press the other side of the ANTENNA into place.

20. Carefully fit the CAMERA GROUNDING SPRINGS.



21. Check their correct positions.

22. Fit the DC- JACK before fitting the PWB.



23. Check the mechanical condition of the spring contacts on the ENGINE MODULE.

24. Carefully place the ENGINE MODULE onto the B-COVER.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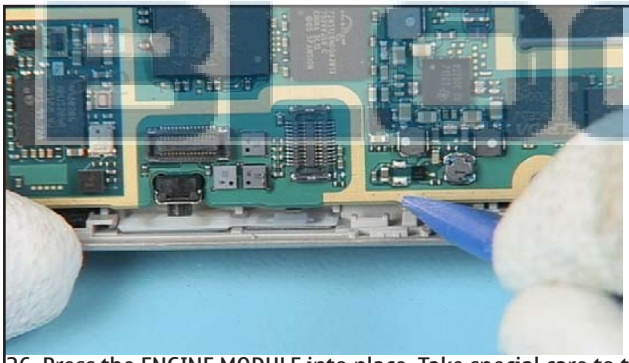
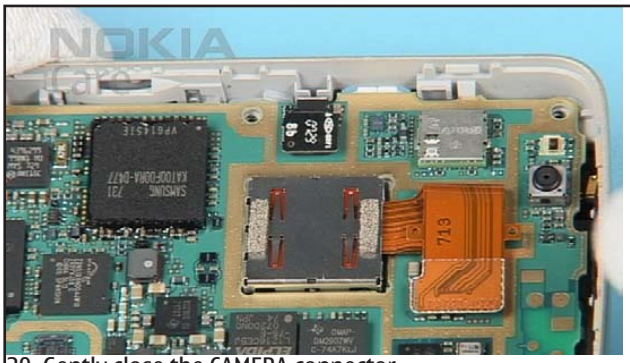
25. Take care to the FLASH connector when securing the PWB in to the B-COVER.



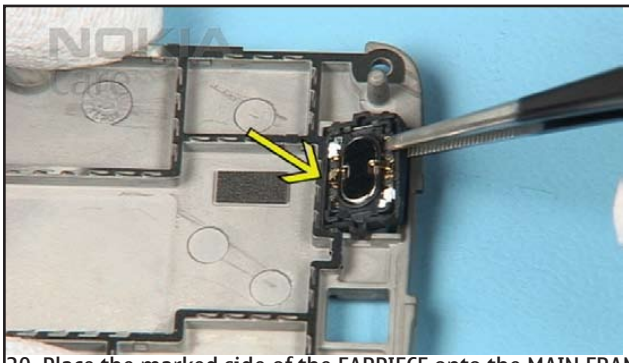
26. Press the ENGINE MODULE into place. Take special care to the electric components.

27. Close the FLASH connector.

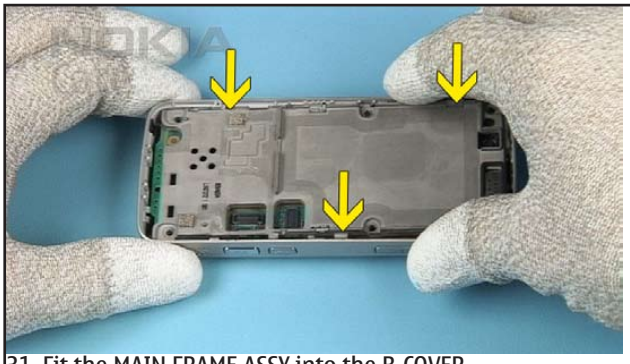
28. Fit the CAMERA MODULE.



29. Gently close the CAMERA connector.



30. Place the marked side of the EARPIECE onto the MAIN FRAME but under the metal gasket.



31. Fit the MAIN FRAME ASSY into the B-COVER.

32. Tighten the screws with a torque of 30Ncm in the order shown.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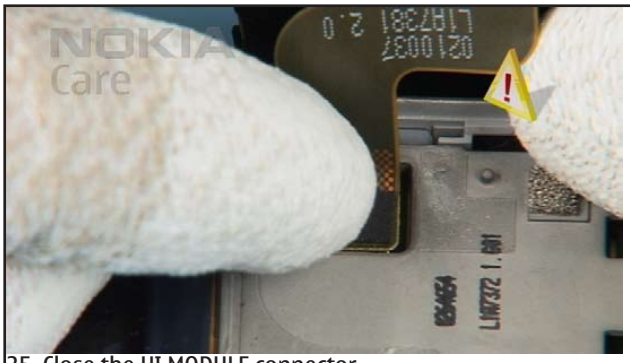
33. Close the LCD connector.

34. Place the LCD onto the MAIN FRAME paying attention to the LCD flex.


35. Close the UI MODULE connector.

36. Fit the UI ASSY into the B-COVER.

37. Place the KEYMAT COVER onto the UI MODULE...

38. ...and press it into place. Check that no gaps remain.

39. Check the mechanical condition of the WINDOW ASSY.

40. Check the other side.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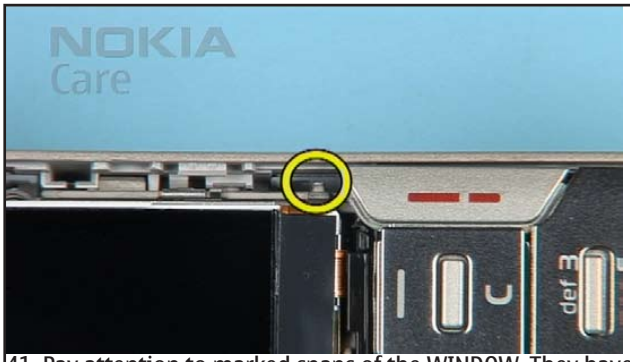
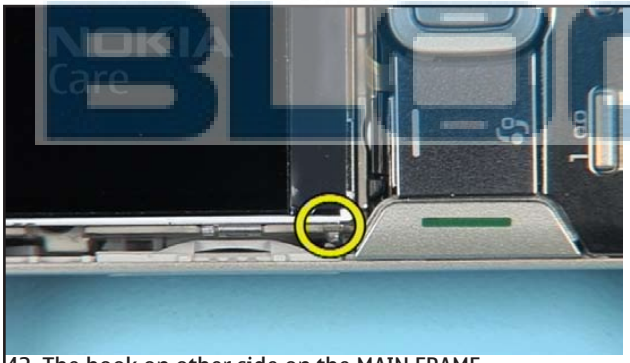
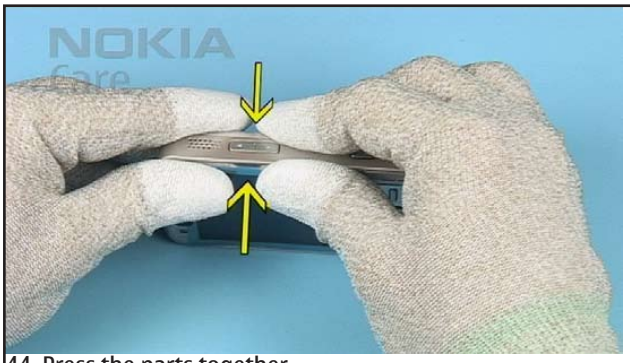


41. Pay attention to marked snaps of the WINDOW. They have to be placed exactly onto the shown hooks.

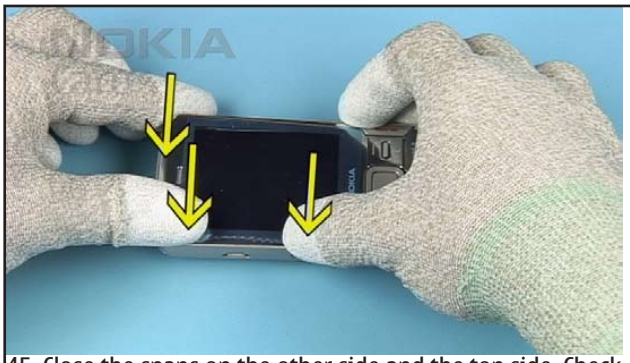


42. The hook on other side on the MAIN FRAME.

43. Fit the WINDOW ASSY starting at the shown side.



44. Press the parts together.



45. Close the snaps on the other side and the top side. Check that no gaps remain.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